

**METHOD AND APPARATUS FOR TRANSPORTING PARCELS OF DATA USING
NETWORK ELEMENTS WITH NETWORK ELEMENT STORAGE**

ABSTRACT

A network element with network element storage and independent intelligence may be configured to provide temporary mass storage to facilitate the transfer of large files across an optical network. The network element may also be provided with intelligence to enable the network element to maintain a higher level understanding of the data flows. Using network element storage enables network elements involved in data transmission across the network to temporarily store data being transferred on the network. This allows parcels of data to be transmitted part way through the network when a complete path through the network is not available. It also allows data to be aggregated at strategic locations on the network, such as at the location of a transmission bandwidth mismatch, to enable the data to be transmitted over the high capacity optical resource at a higher rate, thus more efficiently utilizing the bandwidth on the higher bandwidth resource.